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Impact of Digital Tools on Service Delivery Efficiency in Government Ministries, Anambra State (2015–2023)

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ABSTRACT

This study explored the impact of e-administration on service delivery efficiency in selected ministries in Anambra State amid rising demands for digital transformation in the public sector. Using a survey design, data were collected through structured questionnaires administered to staff across the ministries of Education, Finance, Works, and Women Affairs. The study combined primary data from respondents with secondary data from documents and literature and employed both descriptive and inferential statistical analyses. Results revealed mixed perceptions of digital progress, with many respondents expressing skepticism about the effectiveness and consistency of digital tool adoption. While some acknowledged gradual improvements, others highlighted persistent reliance on manual processes, uneven implementation across ministries, and challenges such as limited infrastructure, insufficient training, and inconsistent policy enforcement. Leadership support and infrastructure development were recognized as essential enablers, yet the overall effectiveness of training programs remained unclear. Furthermore, statistical analysis found no significant gender-based differences in perceptions of service delivery outcomes, suggesting that the impact of digitization is broadly experienced across demographic groups. Despite ongoing efforts, the study concluded that systemic obstacles continue to constrain the full benefits of digital governance in the state. It recommends greater investment in infrastructure, continuous staff development, and stronger policy enforcement to ensure that digital transformation leads to meaningful improvements in public service delivery.

Keywords: Digital Tools, E-Administration, Service Delivery, Public Sector, Anambra State, Ict, Efficiency, Governance

INTRODUCTION

The deployment of digital tools in government ministries has increasingly shaped the way public services are delivered in Nigeria. Digital tools refer to electronic technologies, software, and platforms used to enhance communication, data management, and service delivery (Orji et al, 2022). In the context of public administration, digital tools include computers, internet services, cloud storage, management information systems, e-mails, e-portals, biometric systems, and mobile applications. These tools support the automation of tasks, improve data accessibility, streamline administrative workflows, and enable faster decision-making. When effectively deployed, digital tools help reduce bureaucracy, promote transparency, and boost productivity (Ifeanyi-Obi & Corbon, 2023).

In government ministries, they facilitate efficient service delivery by replacing manual processes with real-time digital interactions, leading to better coordination, reduced errors, and improved citizen satisfaction. In an era marked by growing demand for accountability, speed, and citizen-friendly services, technology has become an essential driver of reform in the public sector (Kamale & Asaju, 2025). Ministries now rely on various digital solutions such as online

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portals for applications and payments, biometric systems for staff monitoring, and digital databases for service tracking and coordination. These tools are meant to reduce inefficiencies, limit face-to-face interactions that may enable corruption, and create a more transparent and accessible system of governance (Shibambu & Ngoepe, 2024). However, while the intention behind the digital transformation of public services is clear, its actual impact on service delivery efficiency remains uneven across ministries.

Service delivery refers to the process through which public institutions provide goods and services to citizens in an efficient, timely, and transparent manner. It involves the planning, execution, and monitoring of administrative functions aimed at meeting public needs. In government ministries, effective service delivery ensures that citizens access essential services such as education, healthcare, infrastructure, and financial support without unnecessary delays (Olabimitan et al, 2025). High-quality service delivery promotes trust in governance, enhances public satisfaction, and reflects the government's commitment to accountability and responsiveness. Despite the commendable investment in digital infrastructure, many citizens still encounter delays, poor responsiveness, and bureaucratic bottlenecks when interacting with public institutions. Ministries that were expected to become more responsive through digitization still struggle with slow service delivery and internal disorganization (Wanyama, 2016). For example, many platforms are launched with fanfare but fall into disuse due to poor implementation, limited staff training, or infrastructure deficits such as unreliable electricity and poor internet connectivity. In some cases, digital tools end up compounding existing inefficiencies rather than solving them.

When implemented correctly, digital tools can significantly enhance efficiency. For instance, in the Federal Inland Revenue Service (FIRS), the introduction of e-tax systems led to an increase in voluntary tax compliance and reduced the time and paperwork previously involved in tax processing. Acquah (2025) observed that such systems also minimized opportunities for corruption by reducing direct contact between taxpayers and officials. Similarly, the use of digital platforms in the Ministry of Education improved the speed of processing scholarship applications and reduced cases of missing documentation. These examples suggest that digital tools, when well-integrated and supported, can improve workflow, save time, and increase public satisfaction.

The introduction of biometric systems in the Ministry of Health further illustrates how digital solutions can address long-standing issues. According to Milukutu and Siachisa (2023), biometric attendance tracking reduced absenteeism among health workers and ensured better staff deployment. The same ministry has also leveraged digital platforms to monitor the distribution of medical supplies, which improved accountability and planning during public health interventions. These instances show that digital tools have the potential to transform service delivery by promoting transparency and enhancing operational efficiency. However, this potential is often undermined by several barriers. Infrastructural challenges remain a major concern, particularly in ministries located outside urban centers where internet access and power supply are not reliable. Furthermore, many civil servants are not digitally literate, leading to underutilization of the tools available to them. Mu and Wang (2022) argue that without adequate training and change management strategies, public servants may either misuse or completely ignore digital systems. There is also the problem of resistance to change, especially from older employees who are more comfortable with manual systems.

Another issue that frequently arises is the lack of interoperability between digital platforms across ministries. Ministries often procure different digital tools without considering how they will work together. As a result, systems operate in silos, and information cannot be easily shared between departments. This disconnect slows down processes that require inter-agency coordination (Adetomiwa and Gberevbie (2022). The motivation for this study comes

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from a growing need to understand whether the digital tools introduced in government ministries have truly made service delivery more efficient. Between 2015 and 2023, several ministries in Anambra State embraced technology such as online portals, biometric attendance systems, and digital filing to improve how services reach the public (Anaekwe et al, 2025; Okeke & Anaekwe, 2025).

Despite these changes, many people still experience slow responses, repeated visits, and unclear procedures when dealing with government offices. Research such as that of Chima et al (2021) shows that while digital systems are in place, their impact on service delivery is often minimal due to poor usage, limited staff training, and unreliable infrastructure. However, much of the focus has been on federal-level reforms, leaving a knowledge gap at the state level. Anambra State has seen considerable investment in digital transformation, yet there's little evidence showing whether these efforts have led to noticeable improvements in daily operations. This study is motivated by the need to fill that gap offering a closer look at how digital tools have shaped efficiency in selected ministries, and whether the promises of faster, more transparent services have been met in practical terms.

While many studies focus on federal or national e-governance efforts, limited empirical research has assessed sub-national implementation, especially in Southeast Nigeria. This study fills that gap by conducting a focused, data-driven analysis of how digital tools have been deployed and perceived in key government ministries in Anambra State between 2015 and 2023. By examining variations in adoption, challenges, and outcomes at the state level, this research offers a more nuanced understanding of the practical barriers and institutional dynamics that shape digital transformation outside the federal context. The findings provide valuable insights for policymakers, development practitioners, and public sector managers seeking to enhance service delivery efficiency through localized digital governance initiatives.

METHOD

The study adopted a survey research design. The survey method involved the use of structured questionnaires that were designed to obtain information from respondents. The aim of the survey research design was not only to collect data but also to discover meaning in the data collected so that they could be better interpreted, explained, and understood. This study was carried out in Anambra State. Anambra State is one of the five states in South-East geo-political zone of Nigeria. It shares boundaries with Delta State to the West, Imo State to the South, Enugu State to the East and Kogi State to the North. It is divided into three senatorial zones: Anambra North, Anambra Central and Anambra South. There are 21 Local Government Areas in the State and the indigenous language of the people is predominantly Igbo.

The population for this research was the employees of the four selected government ministries. The population of the employees in this ministry obtained from the permanent secretary is one thousand one hundred and five (1105) (Permanent Secretary of the Respective Ministries, 2023). Hence, they form the population of this study. Sample is made up of the members of a population (the target population), the latter referring to a body of people or to any other collection of items under consideration for the purpose of the research. The essence of using sample is adequately to manipulate the enormous population so as to avoid error due to calculation of large numbers. In determining the sample size for this research work, the statistical formula devised by Yamane (1967) was employed.

The formular state thus:

$$n = \frac{N}{1 + N\,(e)^2}.$$

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Where n = Sample size
N = Population of study
e = Margin of error, and in this case = 0.05
1 = constant value
N.B. Target population of the organization is 1105
Substituting into formula gives

$$n = \frac{1105}{1 + 1105\,(0.05)^2}$$

$$n = \frac{1105}{1 + 1105\,(0.0025)}$$

$$n = \frac{1105}{1 + 2.7625}$$

$$n = \frac{1105}{3.7625}$$

$$n = 293.7$$

The sample size is 294. Proportionate sampling technique was then used to determine the sample for each of the ministries. Proportionate sampling is a statistical sampling technique used in research and data analysis. It involves selecting a sample from a larger population in a way that ensures that specific subgroups or strata within the population are represented in the sample in proportion to their actual size or importance in the population.

In this study, both primary and secondary sources of data were used. Primary data offered the researchers the opportunity to collect first-hand information that was primarily useful for the study. The data collection method used was designed to solicit relevant data directly from employees of the selected ministries that made use of ICT facilities through the use of a structured questionnaire. Also, secondary sources of data were used. Secondary sources of data referred to data collected by someone other than the user. Library materials provided the bulk of the secondary research data collected by the researcher.

Questionnaire was the major instrument of data collection. The questionnaire was in form of fixed response alternative questions that require the respondent to answer from a predetermined set of answers to every question. The questionnaire employed the Likert scaling technique. It is a widely used rating scale which requires the respondents to indicate a degree of agreement or disagreement with each of a series of statements or questions. This rating scale is easy to construct and administer, and respondents readily understand how to use the scale. The likert scale used in this study was categorised between 1 and 4 where 1 represents Strongly Agree and 4 represents Strongly Disagree.

The questionnaire contained close-ended questions which guide the respondents' where specified answers are needed to make analysis straight forward. The questionnaire was divided into two sections, A and B. While Section A focused on the demographic profile of respondents; Section B concentrated on effect of e-administration on employee service delivery. 294 questionnaire was distributed and collected back immediately, which yielded 100% return rate. The questionnaire responses were collated, tallied and coded into SPSS software in the following order: 1–Strongly Agree, 2 – Agree, 3– Disagree, 4 – Strongly Disagree; 1 – Male, 2 – Female; 1 -<15 years in service, 2 - >15years in service; 1- First degree, 2 - Post graduate, 3 - O'level. .

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In a quest to attach the validity feature to the questionnaire was designed for this study, the questionnaire was pre-tested to the supervisor and two other experts in the Department of Public Administration, Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus. The purpose, research questions and hypotheses were presented to the experts to serve as a guide. These validators were requested to scrutinize the items and ascertain the content coverage, relatedness of the items to research questions and hypotheses, appropriateness of language and suitability of the items to the level of the respondents. The comments, suggestions and recommendations by validators were used in the modification of the items leading to the final development of the instrument.

The reliability of a measurement instrument was the extent to which the instrument yielded consistent results when the construct being measured had not changed. The central purpose of reliability was to provide consistent results and minimize errors and biases. The instrument was trial-tested with a representative sample of 30 employees from the Anambra State Ministry of Health, randomly selected. The Ministry of Health was selected because it had similar characteristics with the ministries under study. The scores obtained from the respondents were collated to determine the internal consistency of the scores for the items in each section.

The tools that was used in analyzing the data collected include tables, frequencies and simple percentages. In analyzing the hypothesis, the independent samples t-test will be used. The independent samples t-test is a statistical hypothesis test used to determine if there is a significant difference between the means of two independent groups or samples. As per decision rule, accept the null hypothesis if the calculated value of t is less than the critical value of t; if not reject it. Formula for t-test is

$$t = \frac{(\bar{X} - \bar{X}_2)}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

Where,

$\bar{X}_1$ = observed mean of 1st sample

$\bar{X}_2$ = observed mean of 2nd sample

s_1 = standard deviation of 1st sample

s_2 = standard deviation of 2nd sample

n_1 = size of 1st sample

n_2 = size of 2nd sample.

RESULT AND DISCUSSION

E-administration implementation in Anambra State ministries has seen gradual progress from 2015 to 2023, with varying degrees of digitalization across departments.

Table 1: Respondents' Perception of the Progress of E-Administration Implementation in Anambra State Ministries (2015–2023)

Option	Respondents	Percentages (%)
Strongly Disagree	215	73.1
Disagree	43	14.6
Agree	23	7.8

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Strongly Agree	13	4.4
Total	294	100.0

Source: Field Survey, 2023.

In Table 1, respondents' views on the statement regarding the progress of e-administration implementation in Anambra State ministries from 2015 to 2023 are presented. The majority, 73.1%, "Strongly Disagrees," indicating a perception of slow progress. There are also 14.6% "Disagree," 7.8% "Agree," and 4.4% "Strongly Agree." This suggests that a significant number of respondents believe that progress has been slow, with only a small fraction expressing agreement with the statement.

Adopting E-administration Tools and Systems

Table 2: Respondents' Views on the Uneven Adoption of E-Administration Tools Across Government Ministries in Anambra State

Option	Respondents	Percentages (%)
Strongly Disagree	208	70.7
Disagree	0	0
Agree	7	2.4
Strongly Agree	79	26.9
Total	294	100.0

Source: Field Survey, 2023.

In Table 2, respondents' opinions on the statement about government ministries in Anambra State adopting e-administration tools and systems with remaining disparities are presented. A significant portion, 70.7%, "Strongly Disagrees," indicating a perception of significant progress. There are no "Disagree" responses, and only 2.4% "Agree." The majority, 26.9%, "Strongly Agree," suggesting that respondents believe that while progress has been made, disparities in e-administration adoption still exist.

Incorporated digital solutions for various administrative processes.

Table 3: Respondents' Assessment of the Growth in E-Administration Adoption in Anambra State Ministries from 2015 to 2023

Option	Respondents	Percentages (%)
Strongly Disagree	131	44.6
Disagree	52	17.7
Agree	87	29.6
Strongly Agree	24	8.2
Total	294	100.0

Source: Field Survey, 2023.

In Table 3, respondents' perspectives on the statement regarding e-administration adoption in 2015 and its progress to 2023 in Anambra State ministries are presented. A substantial portion, 44.6%, "Strongly Disagrees," indicating that they believe e-administration adoption was low in 2015 and has not significantly improved by 2023. Additionally, 17.7% "Disagree," 29.6% "Agree," and 8.2% "Strongly Agree." This suggests a range of opinions, with a notable portion expressing disagreement with the statement..

Shifted from Manual Paperwork to Digital Record-keeping and Communication Channels

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Table 4: Respondents' Opinions on the Shift from Manual to Digital Record-Keeping and Communication in Anambra State Ministries (2015–2023)

Option	Respondents	Percentages (%)
Strongly Disagree	111	37.8
Disagree	85	28.9
Agree	43	14.6
Strongly Agree	55	18.7
Total	294	100.0

Source: Field Survey, 2023.

In Table 4, respondents' views on the statement about the transition of Anambra State ministries from manual paperwork to digital record-keeping and communication channels during the study period are presented. A significant portion, 37.8%, "Strongly Disagrees," indicating a belief that the transition has not been progressive. There are also 28.9% "Disagree," 18.7% "Strongly Agree," and 14.6% "Agree." This suggests a diversity of opinions, with a significant fraction expressing disagreement with the statement..

The Implementation of E-Administration Has Followed an Upward Trajectory

Table 5: Respondents' Perception of the Upward Trend in E-Administration Implementation for Efficient Governance in Anambra State Ministries

Option	Respondents	Percentages (%)
Strongly Disagree	91	31.0
Disagree	96	32.7
Agree	47	16.0
Strongly Agree	60	20.4
Total	294	100.0

Source: Field Survey, 2023.

In Table 5, respondents' perspectives on the statement about the trajectory of e-administration implementation in Anambra State, with an increasing number of ministries embracing technology for efficient governance, are presented. A substantial portion, 31.0%, "Strongly Disagrees," indicating that they do not believe there has been an upward trajectory. Additionally, 32.7% "Disagree," 20.4% "Strongly Agree," and 16.0% "Agree." This indicates diverse opinions, with a significant fraction expressing disagreement with the statement.

Resource Constraints.

Table 6: Respondents' Views on Disparities in E-Administration Implementation Due to Resource Constraints in Anambra State Ministries

Option	Respondents	Percentages (%)
Strongly Disagree	43	14.6
Disagree	0	0
Agree	7	2.4
Strongly Agree	244	83.0
Total	294	100.0

Source: Field Survey, 2023.

In Table 6, respondents' opinions on the statement about the varying degrees of e-administration implementation in Anambra State ministries, with some facing challenges due to resource constraints, are presented. The majority, 83.0%, "Strongly Agree," suggesting a

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consensus that some ministries do face resource constraints in fully implementing e-administration. There are no "Disagree" responses, and only 2.4% "Agree," with 14.6% "Strongly Disagree." This indicates a dominant opinion of strong agreement with the statement.

The Majority had Partially Adopted Digital Practices.

Table 7: Respondents' Assessment of the Extent of E-Administration Adoption in Anambra State Ministries Between 2015 and 2023

Option	Respondents	Percentages (%)
Strongly Disagree	131	44.6
Disagree	53	18.0
Agree	88	29.9
Strongly Agree	22	7.5
Total	294	100.0

Source: Field Survey, 2023.

In Table 7, respondents' perspectives on the statement about the adoption of comprehensive e-administration systems in Anambra State ministries from 2015 to 2023 are presented. A significant portion, 44.6%, "Strongly Disagrees," indicating a belief that the majority had not partially adopted digital practices by 2023. Additionally, 18.0% "Disagree," 29.9% "Agree," and 7.5% "Strongly Agree." This suggests a range of opinions, with a notable portion expressing disagreement with the statement.

Factors such as budget allocations, leadership commitment, and IT infrastructure influenced the pace and extent of e-administration adoption.

Table 8: Respondents' Views on the Influence of Budget, Leadership, and IT Infrastructure on E-Administration Adoption in Anambra State Ministries

Option	Respondents	Percentages (%)
Strongly Disagree	33	11.2
Disagree	0	0
Agree	5	1.7
Strongly Agree	256	87.1
Total	294	100.0

Source: Field Survey, 2023.

In Table 8, respondents' views on the statement about the factors influencing the pace and extent of e-administration adoption, including budget allocations, leadership commitment, and IT infrastructure, are presented. The majority, 87.1%, "Strongly Agree," suggesting a consensus that these factors play a significant role in e-administration adoption. There are no "Disagree" responses, and only 1.7% "Agree," with 11.2% "Strongly Disagree." This indicates a dominant opinion of strong agreement with the statement.

Employee training initiatives and awareness campaigns played a crucial role in promoteing e-administration implementation

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Table 9: Respondents' Opinions on the Role of Employee Training and Awareness Campaigns in Promoting E-Administration Implementation in Anambra State Ministries

Option	Respondents	Percentages (%)
Strongly Disagree	131	44.6
Disagree	0	0
Agree	139	47.3
Strongly Agree	24	8.2
Total	294	100.0

Source: Field Survey, 2023.

In Table 9, respondents' opinions on the statement about the role of employee training initiatives and awareness campaigns in promoteing e-administration implementation in Anambra State ministries are presented. The majority, 47.3%, "Agree," indicating a consensus that these initiatives played a crucial role. There are no "Disagree" responses, and only 8.2% "Strongly Agree," with 44.6% "Strongly Disagree." This suggests a dominant opinion of agreement with the statement, with a substantial portion strongly disagreeing.

The effect of the deployment of digital tools on the efficiency of service delivery

Table 10: Respondents' Perception of the Impact of Digital Tool Deployment on Service Delivery Efficiency in Anambra State Ministries

Option	Respondents	Percentages (%)
Strongly Disagree	131	44.6
Disagree	100	34.0
Agree	43	14.6
Strongly Agree	20	6.8
Total	294	100.0

Source: Field Survey, 2023.

In Table 10, respondents' views on the statement about the effect of the deployment of digital tools on the efficiency of service delivery in Anambra State ministries reflecting a transition period marked by steady progress toward a more digitally integrated government administration are presented. A substantial portion, 44.6%, "Strongly Disagrees," indicating a perception of limited progress. Additionally, 34.0% "Disagree," 6.8% "Strongly Agree," and 14.6% "Agree." This suggests a range of opinions, with a significant portion expressing disagreement with the statement.

There is no significant relationship between the e-administration deployment of digital tools and efficiency of the service delivery in the selected government ministries in Anambra State from 2015 to 2023.

Table 11: Group Statistics for the variation

Gender	N	Mean	Std. Deviation	Std. Error Mean
Male	101	29.7921	5.37460	.53479
Female	193	30.4819	5.81225	.41837

Table 11 presents group statistics related to the effect of e-administration on employee service delivery, specifically comparing male and female employees in government ministries in Anambra State from 2015 to 2023. These statistics are crucial for examining potential gender-based variations in the effect of e-administration on service delivery. The mean service delivery score for male employees is 29.7921, while for female employees, it is slightly higher at 30.4819.

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The standard deviation values are 5.37460 for males and 5.81225 for females, and the standard error of the mean is 0.53479 for males and 0.41837 for females.

The table suggests a modest difference in mean service delivery between male and female employees. On average, female employees appear to have slightly higher service delivery scores. These findings align with research that has explored gender-based service delivery differences, which can be influenced by various factors such as task preferences and work habits (Wanyama, 2016). The standard deviation values indicate the extent of variation within each gender group. Both groups have relatively similar standard deviation values, implying that there is a similar spread of service delivery scores among male and female employees. This indicates that the variation in service delivery is consistent across genders. To assess the statistical significance of these gender-based differences, further statistical tests, such as t-tests was conducted as shown in Table 4.8. These tests would determine whether the observed variations are statistically significant or if they could have occurred by chance.

Table 12: Independent Samples Test for the variation

	Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	2.220	.137	-.991	292	.322	-.68979	.69586	-2.05933	.67976
Equal variances not assumed			-1.016	217.440	.311	-.68979	.67900	-2.02805	.64848

Table 12 presents the results of an independent samples test assessing the variation in the effect of e-administration on employee service delivery between male and female employees in government ministries in Anambra State from 2015 to 2023. This statistical analysis aims to determine whether there are statistically significant differences in service delivery based on gender. Levene's Test for Equality of Variances assesses whether the variances in service delivery scores for male and female employees are equal. The test yields an F statistic of 2.220 and a significance level (Sig.) of 0.137. This indicates that the assumption of equal variances is not significantly violated ($p > 0.05$), suggesting that the variances in service delivery scores for both groups are relatively similar.

The t-test for Equality of Means evaluates whether there is a statistically significant difference in mean service delivery scores between male and female employees. When equal variances are assumed, the t-test results in a t-statistic of -0.991 with 292 degrees of freedom. The associated p-value (Sig. 2-tailed) is 0.322, which is greater than the typical significance level of 0.05. This suggests that there is no statistically significant difference in mean service delivery scores between male and female employees when equal variances are assumed. When equal variances are not assumed, the t-test results in a t-statistic of -1.016 with 217.440 degrees of freedom. The associated p-value is 0.311, which is also greater than 0.05. This indicates that even when equal variances are not assumed, there is no statistically significant difference in mean service delivery scores between male and female employees.

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Based on the results of the independent samples t-test, the hypothesis that the effect of e-administration on employee service delivery varies significantly between male and female employees is not supported. The analysis shows that there are no statistically significant differences in service delivery scores between these gender groups. Therefore, the hypothesis is rejected. This finding aligns with prior research indicating that gender-based service delivery differences in the workplace are often minimal and not statistically significant (Solinthone & Rumyantseva, 2016). It underscores the importance of equitable access to and utilization of e-administration tools to ensure that all employees benefit equally in terms of service delivery enhancements.

The deployment of digital tools in Anambra State ministries between 2015 and 2023 has produced mixed outcomes in terms of improving service delivery. While some ministries have made notable progress in adopting e-administration, others continue to struggle due to systemic issues such as limited infrastructure, inconsistent leadership commitment, and inadequate funding. These disparities have resulted in an uneven pace of digital transformation across the state's public service sector. Although digital tools hold great promise for improving efficiency, transparency, and responsiveness, their full potential remains largely untapped in many of the ministries. This finding is consistent with the work of De-Araujo, Priadana, Paramarta & Sunarsi, 2021), who argued that fragmented digital infrastructure and weak institutional support significantly hinder the success of e-governance initiatives in Nigeria. Similarly, German, Obiekwe, Ogbo, Mbonu & Chukwu, 2021) found that ministries with strong leadership and dedicated ICT investments were more likely to achieve improved service delivery outcomes. Their study emphasized that successful digital governance depends not only on the availability of digital tools but also on the organizational culture and commitment to change. Nda and Fard (2013) also highlighted the importance of ongoing staff training and capacity development, noting that civil servants who receive regular ICT training are more likely to adopt and effectively use digital tools. However, the presence of training alone is not always sufficient if not matched by adequate policy support and practical application. In contrast, Adetomiwa and Gberevbie (2022) documented positive outcomes in Lagos State, where sustained investment in digital infrastructure and well-coordinated implementation led to significant improvements in record management, responsiveness, and overall service delivery.

CONCLUSION

The study examined the effect of deploying digital tools on the efficiency of service delivery in selected government ministries in Anambra State, Nigeria, from 2015 to 2023. The findings revealed that while there has been measurable progress in the adoption of digital technologies, the extent of implementation varies significantly across ministries. Factors such as budgetary allocation, leadership commitment, employee training, and ICT infrastructure played critical roles in determining the pace and effectiveness of digital transformation. Despite notable improvements, challenges such as limited resources, inconsistent policy execution, and varying levels of staff preparedness continue to hinder the full realization of e-administration benefits. Statistical analysis also showed no significant difference in service delivery outcomes based on gender, implying that the impact of digital tools on service efficiency is more closely tied to institutional and infrastructural factors than to employee demographics. The study concludes that digital tools have the potential to transform public service delivery in Anambra State. However, their success depends on sustained political will, adequate funding, consistent employee training, and a well-coordinated implementation strategy. This study was limited to self-reported perceptions and did not include performance audits. Future research should incorporate objective service metrics and longitudinal analysis.

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REFERENCES

Acquah, A. (2025). E-taxing maturity in developing economies: evidence from corporate tax payers in Ghana. *Digital Policy, Regulation and Governance*, *27*(4), 466-485.

Adetomiwa, F. T., & Gberevbie, D. E. (2022). E-Administration and the G2e Interaction in Oto-Awori Council Development Area of Lagos State, Nigeria: A Technology Acceptance Model-Based Approach. *African Renaissance*, *2022*(si1), 285.

Anaekwe, V. B., Okoye, N. S., Okoye, E., & Ohanyere, C. P. (2025). Manpower planning and organizational performance: A study of Anambra State Ministry of Environment, 2018-2022. *Humanities Horizon*, *2*(3), 144-155.

Chima, P., Ahmadu, J., & Folorunsho, O. G. (2021). Implementation of digital integrated personnel and payroll information system: Lesson from Kenya, Ghana and Nigeria. *Governance and Management Review*, *4*(2).

De-Araujo, L. M., Priadana, S., Paramarta, V., & Sunarsi, D. (2021). Digital leadership in business organizations. *International Journal of Educational Administration, Management, and Leadership*, 45-56.

German, I. O., Obiekwe, K. K., Ogbo, R. N., Mbonu, O. A., & Chukwu, N. R. (2021). Extending e-administration capabilities for safe school management using ICT peripheral devices in secondary schools in Ebonyi state, Nigeria. *European Journal of Education Studies*, *8*(5).

Ifeanyi-Obi, C. C., & Corbon, B. L. (2023). Utilization of digital tools in extension service delivery amongst extension agents in Akwa Ibom State, Nigeria. *Journal of Agricultural Extension*, *27*(4), 67-76.

Kamale, M. Y., & Asaju, K. (2025). E-governance Adoption and Service Delivery in Selected Tertiary Institutions in Adamawa State, Nigeria 2010–2024. *Futurity of Social Sciences*, *3*(1), 126-153.

Milukutu, A., & Siachisa, M. (2023). Assessing the impact of digital transformation on employee performance in the public sector: A Case Study of Zambia's Ministry of Health Headquarters (2017-2022). *International Journal of Humanities, Social Sciences and Education*.

Mu, R., & Wang, H. (2022). A systematic literature review of open innovation in the public sector: Comparing barriers and governance strategies of digital and non-digital open innovation. *Public Management Review*, *24*(4), 489-511.

Nda, M. M., & Fard, R. Y. (2013). The impact of employee training and development on employee service delivery. *Global journal of commerce and management perspective*, *2*(6), 91-93.

Okeke, M. N., & Anaekwe, V. B. (2025). E-administration and employee service delivery in selected government ministries in Anambra state: 2015-2023. *Humanities Horizon*, *2*(2), 109-121.

Olabimitan, A. O., Ogunmodede, K., & John, S. (2025). E-Governance And Public Service Delivery: Evidence From Nigeria. *ORGANIZE: Journal of Economics, Management and Finance*, *4*(1), 110-122.

Orji, I. J., Ojadi, F., & Okwara, U. K. (2022). Assessing the pre-conditions for the pedagogical use of digital tools in the Nigerian higher education sector. *The International Journal of Management Education*, *20*(2), 100626.

DOI: https://doi.org/10.70188/dyw20m85

Shibambu, A., & Ngoepe, M. (2024). Enhancing service delivery through digital transformation in the public sector in South Africa. *Global Knowledge, Memory and Communication*, *74*(11), 63-76.

Solinthone, P., & Rumyantseva, T. (2016). E-government implementation. In *MATEC Web of Conferences* (Vol. 79, p. 01066). EDP Sciences.

Wanyama, B.W. (2016). Assessment of e-government implementation on organizational effectiveness in the department of immigration in Nairobi, Kenya. *Doctoral Dissertation*, Mount Kenya University.

Yamane, Taro. (1967). Statistics: An Introductory Analysis, 2nd Edition, New York: Harper and Row.